

### Claims

1. A fibre for spunbonded non-woven fabrics comprising a propylene polymer composition (A) having an MFR value (MFR (1)) from 6 to 150 g/10 min and being selected from:
  - i) a crystalline propylene random copolymer or a crystalline propylene polymer composition selected from
    - a) a copolymer or polymer composition containing at least 0.8% by weight of ethylene and optionally one or more C<sub>4</sub>-C<sub>10</sub>  $\alpha$ -olefins and having a melting temperature of 155° C or higher, a content of fraction soluble in xylene at room temperature lower than 4% by weight and a value of the ratio of the polymer fraction collected at the temperature range from 25° to 95° C by temperature rising elution fractionation (TREF) with xylene to the xylene soluble fraction at room temperature higher than 8; and
    - b) a copolymer or polymer composition containing more than 2.5 wt% by weight of ethylene and optionally one or more C<sub>4</sub>-C<sub>10</sub>  $\alpha$ -olefins and having a melting temperature of 153° C or higher, a content of fraction soluble in xylene at room temperature lower than 10% by weight and a value of the ratio of the polymer fraction collected at the temperature range from 25° to 95° C by TREF with xylene to the xylene soluble fraction at room temperature higher than 4; and
  - ii) a crystalline propylene polymer composition having a melting temperature of 153° C or higher, a content of fraction soluble in xylene at room temperature lower than 10% by weight; the said composition containing at least 0.64 wt% of ethylene and/or C<sub>4</sub>-C<sub>10</sub>  $\alpha$ -olefin recurring unit and comprising (percent by weight):
    - I) 20-80%, of a crystalline propylene homopolymer or crystalline propylene random copolymer containing up to 1.5% by weight of ethylene and/or C<sub>4</sub>-C<sub>10</sub>  $\alpha$ -olefin; and
    - II) 20-80% of a crystalline propylene random copolymer selected from:
      - IIa) a copolymer of propylene with 0.8 to 10% by weight of ethylene; provided that the difference in the ethylene content between polymer

- (I) and polymer (IIa) be at least 0.8 percentage unit with respect to the weight of the (co)polymer concerned;
- IIb) a copolymer of propylene with 1.5 to 18% by weight of a C<sub>4</sub>-C<sub>10</sub>  $\alpha$ -olefin and optionally ethylene; provided that the difference in the comonomer content between polymer (I) and polymer (IIb) be at least 1.5 percentage units with respect to the weight of the (co)polymer concerned; and
- IIc) a mixture of copolymer (IIa) and copolymer (IIb).
2. The fibre of claim 1 wherein composition (A) is polymer composition (ii) having a melting temperature of 155° C or higher, a content of fraction soluble in xylene at room temperature lower than 5% by weight and a value of the ratio of the polymer fraction collected at the temperature range from 25° to 95° C by fractionation with xylene to the xylene soluble fraction at room temperature higher than 8; said composition (ii) comprising (percent by weight):
- I) 20-80% of a crystalline propylene homopolymer and/or crystalline propylene random copolymer containing up to 1.5% by weight of ethylene and/or C<sub>4</sub>-C<sub>10</sub>  $\alpha$ -olefin; and
- II) 20-80% of a crystalline random copolymer selected from:
- IIa) a copolymer of propylene with 0.8 to 5% by weight of ethylene; provided that the difference in the ethylene content between polymer (I) and polymer (IIa) be at least 0.8 percentage unit with respect to the weight of the (co)polymer concerned;
- IIb) a copolymer of propylene with 1.5 to 12% by weight of a C<sub>4</sub>-C<sub>10</sub>  $\alpha$ -olefin and optionally ethylene; provided that the difference in the comonomer content between polymer (I) and polymer (IIb) be at least 1.5 percentage units with respect to the weight of the (co)polymer concerned; and
- IIc) a mixture of copolymer (IIa) and copolymer (IIb).
3. The fibre of claims 1 and 2 wherein composition (A) is obtainable by subjecting to chemical degradation a precursor polymer composition (B) having an MFR value (MFR (2)) of from 0.5 to 50 g/10 min, provided that the ratio of MFR (1) to MFR (2) be from 1.5 to 60.

4. The fibre of claims 1 to 3 wherein the difference in the ethylene content between polymer (I) and polymer (IIa) is at least 1 percentage unit with respect to the weight of the (co)polymer concerned.
5. A melt spin process for the production of the fibres according to claims 1 to 4 characterised in that it is subjected to the process a propylene polymer composition (A) having MFR (1) values from 6 to 150 g/10 min and being selected from:
  - i) a crystalline propylene random copolymer or a crystalline polymer propylene polymer composition selected from:
    - a) a copolymer or polymer composition containing at least 0.8% by weight of ethylene and optionally one or more C<sub>4</sub>-C<sub>10</sub>  $\alpha$ -olefins and having a melting temperature of 155° C or higher, a content of fraction soluble in xylene at room temperature lower than 4% by weight and a value of the ratio of the polymer fraction collected at the temperature range from 25° to 95° C by TREF with xylene to the xylene soluble fraction at room temperature higher than 8; and
    - b) a copolymer or polymer composition containing more than 2.5 to 4.5 wt% by weight of ethylene and optionally one or more C<sub>4</sub>-C<sub>10</sub>  $\alpha$ -olefins and having a melting temperature of 153° C or higher, a content of fraction soluble in xylene at room temperature lower than 10% by weight and a value of the ratio of the polymer fraction collected at the temperature range from 25° to 95° C by TREF with xylene to the xylene soluble fraction at room temperature higher than 4; and
  - ii) a crystalline propylene polymer composition having a melting temperature of 153° C or higher, a content of fraction soluble in xylene at room temperature lower than 10% by weight; the said composition containing at least 0.64 wt% of ethylene and/or C<sub>4</sub>-C<sub>10</sub>  $\alpha$ -olefin recurring unit and comprising (percent by weight):
    - I) 20-80% of a crystalline propylene homopolymer or crystalline propylene random copolymer containing up to 1.5% by weight of ethylene and/or C<sub>4</sub>-C<sub>10</sub>  $\alpha$ -olefin; and
    - II) 20-80% of a crystalline propylene random copolymer selected from:

- IIa) a copolymer of propylene with 0.8 to 10% by weight of ethylene; provided that the difference in the ethylene content between polymer (I) and polymer (IIa) be at least 0.8 percentage unit with respect to the weight of the (co)polymer concerned;
  - IIb) a copolymer of propylene with 1.5 to 18% by weight of a C<sub>4</sub>-C<sub>10</sub>  $\alpha$ -olefin and optionally ethylene; provided that the difference in the comonomer content between polymer (I) and polymer (IIb) be at least 1.5 percentage units with respect to the weight of the (co)polymer concerned; and
  - IIc) a mixture of copolymer (IIa) and copolymer (IIb).
6. A propylene polymer composition having MFR values from 6 to 150 g/10 min, the said composition comprising (percent by weight):
- I) 20-80% of a crystalline propylene homopolymer or crystalline propylene random copolymer containing up to 1.5% by weight of ethylene and/or C<sub>4</sub>-C<sub>10</sub>  $\alpha$ -olefin and having a melting temperature of 155° C or higher, a content of fraction soluble in xylene at room temperature lower than 4% by weight and a value of the ratio of the polymer fraction collected at the temperature range from 25° to 95° C by TREF with xylene to the xylene soluble fraction at room temperature higher than 8; and
  - II) 20-80% of a crystalline propylene random copolymer selected from:
    - IIa) a copolymer of propylene with 0.8 to 10% by weight of ethylene; provided that the difference in the ethylene content between polymer (I) and polymer (IIa) be at least 0.8 percentage unit with respect to the weight of the (co)polymer concerned;
    - IIb) a copolymer of propylene with 1.5 to 18% by weight of a C<sub>4</sub>-C<sub>10</sub>  $\alpha$ -olefin and optionally ethylene; provided that the difference in the comonomer content between polymer (I) and polymer (IIb) be at least 1.5 percentage units with respect to the weight of the (co)polymer concerned; and
    - IIc) a mixture of copolymer (IIa) and copolymer (IIb);
- said polymer composition being obtainable by way of chemical degradation of a precursor polymer composition (B) having MFR (2) values of from 0.5 to 50 g/10 min, provided that the ratio of MFR (1) to MFR (2) be from 1.5 to 60.

7. A crystalline propylene random copolymer or a crystalline propylene polymer composition selected from:
- a) a copolymer or polymer composition containing at least 0.8% by weight of ethylene and optionally one or more C<sub>4</sub>-C<sub>10</sub>  $\alpha$ -olefins and having a melting temperature of 155° C or higher, a content of fraction soluble in xylene at room temperature lower than 4% by weight and a value of the ratio of the polymer fraction collected at the temperature range from 25° to 95° C by TREF with xylene to the xylene soluble fraction at room temperature higher than 8; and
  - b) a copolymer or polymer composition containing more than 2.5 to 4.5 wt% by weight of ethylene and optionally one or more C<sub>4</sub>-C<sub>10</sub>  $\alpha$ -olefins and having a melting temperature of 153° C or higher, a content of fraction collected at the temperature range from 25° to 95° C by TREF with xylene to the xylene soluble fraction at room temperature higher than 4;
- said copolymer or composition being obtainable by way of chemical degradation of a precursor polymer composition (B) having MFR (2) values of from 0.5 to 50 g/10 min, provided that the ratio of MFR (1) to MFR (2) be from 1.5 to 60.
8. A process for the preparation of the polymer composition of claim 6 or 7 comprising the following stages:
- 1) preparing the previously said precursor composition (B) by polymerising the monomers in one or more sequential stages, operating in each stage in the presence of the polymer formed and the catalyst used in the preceding stage, and dosing the molecular weight regulator in such amounts as to obtain an MFR (2) value for the precursor composition of from 0.5 to 50 g/10 min; and
  - 2) subjecting the precursor composition (B) obtained in stage (1) to a degradation treatment with a degradation ratio, in terms of ratio of MFR (1) to MFR (2), from 1.5 to 60.
9. A spunbonded non-woven fabric comprising the fibres of claim 1.